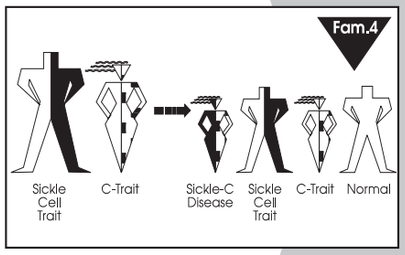
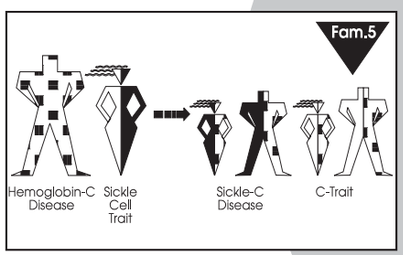
Each time this couple (Fam. 4) has a baby, the baby has a 25 percent chance of having sickle-C disease, a 25 percent chance of having sickle cell trait, a 25 percent chance of having the C-trait and a 25 percent chance of having normal hemoglobin.



Each time this couple (Fam.5) has a baby, the baby has a 50 percent chance of having sickle-C disease or a 50 percent chance of having C-trait.



HOW CAN YOU TELL WHAT HEMOGLOBIN TYPE YOU HAVE?

A special blood test can tell you what kind of hemoglobin you have, whether you have the trait or the disease. You can get the test from your doctor, the public health department, or the sickle cell community-based organization in your area.

By knowing if you and your partner have the trait or not, you can better plan your family, decide about having children, and know the chances involved.

Babies born in South Carolina are tested soon after birth for several genetic conditions including one that will detect hemoglobin-C disorders. These tests are performed on a blood sample taken by pricking the baby's heel. Babies are tested so doctors can find and treat any life-threatening problems.

ASK FOR MORE INFORMATION ON HEMOGLOBIN-C FROM YOUR PUBLIC HEALTH DEPARTMENT, YOUR DOCTOR, YOUR COMMUNITY'S SICKLE CELL ORGANIZATION, OR A GENETIC CENTER IN YOUR AREA.

In addition: The internet has many Web sites full of accurate information about sickle cell disease. Look to those connected with sickle cell medical centers and research facilities.

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ML-000101 9/08

HEMOGLOBIN-C DISORDERS

WHAT IS HEMOGLOBIN?

Hemoglobin is that part of the blood which makes blood red and carries oxygen to every part of the body. Usually red blood cells are round like doughnuts, and thin and rubbery. The shape and flexibility help the cells move easily through the blood vessels.

ARE THERE DIFFERENT TYPES OF HEMOGLOBIN?

There are more than 500 known hemoglobin types. The type of hemoglobin you have is inherited from both of your parents in the same way as the color of your eyes and hair. There are many different mixtures of hemoglobins. Some combinations result in traits that do not cause trouble; for example, C-trait and sickle cell trait. Other mixtures cause hemoglobin disease like sickle-C disease and hemoglobin-C disease.

WHAT IS HEMOGLOBIN-C DISEASE?

A person who inherits hemoglobin-C from both parents will have hemoglobin-C disease. Hemoglobin-C is one type of hemoglobin which is found most often in people whose family came from West or North Africa. Persons with hemoglobin-C disease have only hemoglobin-C inside their red blood cells and can pass only hemoglobin-C to their children. Many of these cells have very dark centers and look like a target or bull's eye. That is why they are called target cells. These target cells cause anemia since they do not last as long as cells with normal hemoglobin in them.

Persons with hemoglobin-C disease have constant anemia. They often have a large spleen and they are more likely to form gall stones. They may also have mild pain in their joints. About one in 6,000 black Americans has this disease.

WHAT IS C-TRAIT?

Hemoglobin-C trait is not the same thing as the disease. People who have C-trait usually do not know they have it because it does not cause trouble. People with C-trait have inherited normal hemoglobin-A from one parent and hemoglobin-C from the other parent. One in 50 black Americans has this hemoglobin type. This person may pass normal hemoglobin or hemoglobin-C to his or her children.

WHAT IS SICKLE CELL TRAIT?

Hemoglobin-S is called sickle cell hemoglobin. When people inherit sickle hemoglobin from one parent and normal hemoglobin-A from the other parent, they have sickle cell trait. One in every 10 black Americans has sickle cell trait.

WHAT IS SICKLE-C DISEASE?

If hemoglobin-C is inherited from one parent and hemoglobin-S is inherited from the other parent, that person has sickle-C disease. This disease may lead to many health problems including:

- constant anemia
- damage to the eyes or joints
- infection, and
- pain in the joints.

This condition usually causes more health problems than hemoglobin-C disease and affects about one in 1,500 black Americans.

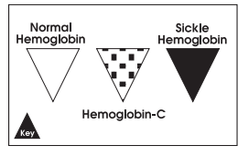
IS THERE A CURE FOR SICKLE-C DISEASE OR HEMOGLOBIN-C DISEASE?

There is no widely available cure, but researchers are working hard to find one. Bone marrow transplants are the only demonstrated method of curing these hemoglobin diseases. They have been used in rare situations with some success in the United States and Europe. Here are some things to help stay as healthy as possible:

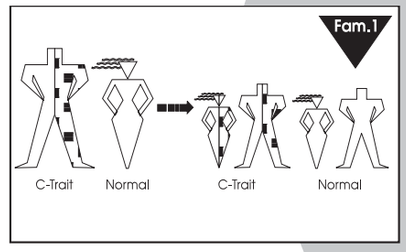
- Get regular medical check-ups.
- Get regular immunizations and vaccines.
- Eat the right foods.
- Get enough rest each day.
- Take antibiotics each day(these help prevent infections in young children) if prescribed by your doctor.

WILL ALL CHILDREN OF PARENTS WHO HAVE HEMOGLOBIN TRAIT HAVE A HEMOGLOBIN DISEASE?

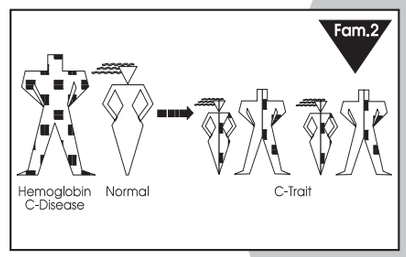
No. The following drawings help explain the different ways children may be affected depending on which hemoglobin type the parent has.



Each time this couple (Fam. 1) has a baby, the baby has a 50 percent chance of having C-trait and a 50 percent chance of having normal hemoglobin.



Each time this couple (Fam. 2) has a baby, the baby will have C-trait but will not have hemoglobin-C disease.



Each time this couple (Fam. 3) has a baby, the baby has a 25 percent chance of hemoglobin-C disease, a 50 percent chance of having C-trait, and a 25 percent chance of having normal hemoglobin.